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ORNL
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#346

To: F. L. Culler

From: R. H. Vaughan

Subject: RaLa Production - Overall Economic Survey

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To: F. L. Culler

Date: August 21, 1951

From: R. H. Vaughan

Subject: RaLa Production - Overall Economic Survey

Recent discussions concerning the MTR-RaLa program have raised the question "Why move RaLa production from ORNL." It has been pointed out that there are some distinct advantages for leaving RaLa production at ORNL, but at the same time other possible processing sites have their advantages. The suggestion was advanced that an overall economic survey be made to determine the optimum processing site.

The survey as presented herein will attempt to show the most desirable plant location based entirely on a cost basis. No attempt has been made to place this evaluation on any basis other than costs directly applicable to the final production facility.

RH Vaughan
R. H. Vaughan

RHV:ee

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PRODUCTION PLANT CAPACITY: 10 Batches Per Year at 30,000 Curies per Batch
 OVERALL OPERATIONS: = Slugs (Feed) Transportation, Processing, Product Transportation to Los
 PROCESS OPERATIONS: = Slug Dissolving, Filtration, Product Precipitation, Product Filtration,

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FEED (Slugs)	W-Slugs	A-Slugs	MTR-Assembly
	Present "A" Cell Unchanged - New Purification fa- cilities in "B" Cell or Cubicle Pits	Present "A" Cell Unchanged - New Purification fa- cilities in "B" Cell or Cubicle Pits	Present MTR-B Flowsheet Build PP-operate-change to production using "B" Cell
PRODUCTION FACILITY			
RESEARCH	\$200,000.00	\$200,000.00	\$400,000.00
DESIGN, CONSTRUCTION, INST.	300,000.00	300,000.00	740,000.00
Sub Total	\$500,000.00	\$500,000.00	\$1,140,000.00
MAINT & OPERATIONS - Yearly	\$175,000.00	\$175,000.00	\$175,000.00
FEED (SLUGS) COST X 10 RUNS/YR	40,000.00	40,000.00	
FEED (SLUGS) TRANS X 10 RUNS/YR	80,000.00	20,000.00	80,000.00
PRODUCT TRANS X 10 RUNS/YR	10,000.00	10,000.00	10,000.00
METAL WASTE X10 RUNS/YR			20,000.00
YEARLY EXPENDITURE	\$305,000.00	\$245,000.00	\$285,000.00
YEARLY EXPENDITURE INCLUDING 5 YEAR AMORTIZATION	\$405,000.00	\$345,000.00	\$513,000.00
YEARLY EXPENDITURE INCLUDING 10 YEAR AMORTIZATION	\$355,000.00	\$295,000.00	\$399,000.00

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product Purification

HCl -- Ether & Nitric Acid Precipitation

Ion Exchange

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<u>RIR-Assembly</u>	<u>MTR-Assembly</u>	<u>W-Slugs</u>	<u>A-Slugs</u>	<u>MTR-Assembly</u>
Present MTR-B Flowsheet Build PP-operate-change to production using "B" Cell	Present MTR-B Flowsheet Build PP @ ORNL-operate Production at IDO	Old "D" Bldg. Process with Modifications	Old "D" Bldg. Process with Modifications	Present MTR-B Flowsheet Build PP @ ORNL - operate Production at L.A.
		Hanford Est. as of 7/1/49 for prod. \$3,500,000.00	Based on Han- ford Est. \$3,500,000.00	
\$400,000.00	\$400,000.00			\$400,000.00
740,000.00	1,200,000.00			1,600,000.00
\$1,140,000.00	\$1,600,000.00	\$3,500,000.00	\$3,500,000.00	\$2,000,000.00
\$175,000.00	\$175,000.00	\$175,000.00	\$175,000.00	\$175,000.00
		30,000.00	30,000.00	
				80,000.00
10,000.00	10,000.00	10,000.00	10,000.00	
20,000.00				20,000.00
\$205,000.00	\$185,000.00	\$215,000.00	\$215,000.00	\$275,000.00
\$433,000.00	\$505,000.00	\$915,000.00	\$915,000.00	\$675,000.00
\$319,000.00	\$345,000.00	\$565,000.00	\$565,000.00	\$475,000.00

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